CLAIMS

1. Method for measuring a talking quality of a communication link in a communications network, the method comprising

a main step of subjecting a degraded speech signal s'(t) with respect to a reference speech signal s(t) to an objective measurement technique (32) for measuring a perceptual quality of speech signals, and producing a quality signal q which represents an estimated value concerning the talking quality degradation,

the degraded speech signal comprising a returned signal r(t),

in which the objective measurement technique comprises a step of modelling masking effects in consequence of noise present in the returned signal comprising the determination of a threshold noise level, by determining a local minimum value of the degraded speech signal s'(t).

2. Method according to claim 1, in which the reference speech signal s(t) comprises a silence period and the threshold noise level is determined in the part of the degraded speech signal s'(t) corresponding to the silence period in the reference speech signal s(t).

3. Method according to claim 2, in which the silence period is provided at the start of the reference speech signal s(t).

4. Method according to claim 3, in which the silence period has a duration of at least 0.5 sec, more preferably at least 0.9 sec.

5. Method according to claim 1, in which the threshold noise level is estimated as local minimum values of successive parts of the degraded speech signal s'(t).

6. Method according to claim 1, in which the threshold noise level is estimated as the local minimum value of the degraded speech signal s'(t) in a predefined value range.

7. Method according to one of the proceeding claims, in which the main step comprises:

- a first processing step of processing the degraded speech signal s'(t) and generating a first representation signal R'(t,f),
- a second processing step of processing the reference speech signal s(t) and generating a second representation signal R(t,f),
- a step of subtracting (32a) the first representation signal from the second representation signal as to produce a difference signal D(t,f),
- a first substep of producing (41) an estimated value Ne of the loudness of the noise present in the returned signal, and
- a second substep of noise suppression (42) carried out on the difference signal using said produced estimated value Ne as to produce the modified difference signal D'(t,f), and
- a step of integrating (32c) the modified difference signal D'(t,f) with respect to frequency and time as to produce the quality signal q.

8. Device for measuring a talking quality of a communication link in a communications network (10), the device comprising measurement means (22; 31, 36) connected to the communication link, the measurement means being arranged to subject a degraded speech signal s'(t) with respect to a reference speech signal s(t) to an objective measurement technique for measuring a perceptual quality of speech signals, and producing a quality signal (q) which represents an estimated value concerning the talking quality degradation,
the degraded speech signal comprising a returned signal r(t),
in which the measurement means (22; 31, 36) are arranged to execute the objective measurement technique by modelling masking effects in consequence of noise present in the returned signal in which the objective measurement technique comprises the determination of a threshold noise level by determining a local minimum value of the degraded speech signal s'(t).

9. Device according to claim 8, in which the reference speech signal s(t) comprises a silence period and the measurement means are further arranged to

determine the threshold noise level in the part of the degraded speech signal s'(t) corresponding to the silence period in the reference speech signal s(t).

10. Device according to claim 9, in which the silence period is provided at the start of the reference speech signal s(t).

11. Device according to claim 10, in which the silence period has a duration of at least 0.5 sec, more preferably at least 0.9 sec.

12. Device according to claim 8, in which the measurement means are arranged to estimate the threshold noise level as local minimum values of successive parts of the degraded speech signal s'(t).

13. Device according to claim 8, in which the measurement means are arranged to estimate the threshold noise level as the local minimum value of the degraded speech signal s'(t) in a predefined value range.

14. Device according to one of the claims 8 through 13, in which the device comprises:

- first processing means (39) for processing the degraded speech signal s'(t) and generating a first representation signal R'(t,f), the first representation signal R'(t,f) being a representation signal of a signal combination of the talker speech signal and the returned signal,
- second processing means (38) for processing the talker speech signal s(t) and generating a second representation signal R(t,f),
- combining means (32) for combining the first and second representation signals as to produce said output signal q, the combining means including
  --subtracting means (40) for subtracting the first representation signal from the second representation signal as to produce a difference signal D(t,f),
  --modelling means (41, 42) for modelling the masking effects carried out on the difference signal as to produce a modified difference signal, including means (41) for producing an estimated value Ne of the loudness of the noise present in the returned signal, and means (42) for carrying out a noise suppression on the difference

signal using said produced estimated value Ne, and for producing the modified difference signal D'(t,f), and

--integrating means (43) for integrating the modified difference signal with respect to frequency and time as to produce the quality signal q.

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